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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,743	05/01/2001	Thomas P. Feist	08CN08803A	3681
23413	7590	10/15/2004	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			BERNATZ, KEVIN M	
			ART UNIT	PAPER NUMBER
			1773	

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/845,743	FEIST ET AL.	
	Examiner Kevin M Bernatz	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-75 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/27/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Amendment

1. Amendments to claims 1 and 30, filed on July 27, 2004, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Examiner's Comments

3. The Examiner notes that applicants have claimed three main embodiments: independent claims 1, 30 and 56. All the claims have been rejected in view of Landin et al. ('774) and the order of the rejections is such that the embodiments are addressed in order from broadest (claim 56) to narrowest (claim 1). The Examiner wishes to call applicants attention to this fact since the claims will not necessarily be referred to in numerical order since some of the dependent claims possess similar limitations to dependent claims of the other main embodiments.
4. The Examiner notes that the areal recording density of a medium is not a positive limitation, in so far as it applies to *just* the medium. Specifically, while the substrate affects the recording density (*Annacone et al., col. 1, lines 28 – 31; and Tenhover et al., col. 3, lines 5 - 10*), there are many additional parameters such as the head-disk spacing (*Annacone et al., col. 1, lines 38 – 48; and Tenhover et al., col. 1, lines 48 – 56*), magnetic layer thickness, coercivity, crystalline texture (*Tenhover et al., col. 1, lines*

48 – 56) and the type of magnetic layer used (*Guha et al.*, col. 1, lines 23 – 57; col. 2, lines 42 – 67; col. 3, lines 5 – 22; and col. 5, lines 33 – 45). The Examiner notes recording densities of over 100 Gbit/in², even up to 400 Gbit/in² are known at the time of applicants' invention (*Guha et al., ibid*). As such, the areal recording density is only a positive limitation in so far as an apparatus claim is concerned, wherein the disk and head are positively recited. Presently, the claims are directed only to a magnetic storage medium, and are not directed to an apparatus comprising both the medium and a read/write head. **For purposes of evaluating the prior art, the Examiner has interpreted this limitation as it impacts the structure of the medium, specifically the medium *in its entirety* must be capable of achieving the claimed areal recording density for optimal head-disk spacing.**

Claim Rejections - 35 USC § 102

5. Claims 56, 58 – 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Landin et al. (U.S. Patent No. 5,538,774) for the reasons of record as set forth in Paragraph No. 6 of the Office Action mailed on May 26, 2004.

Claim Rejections - 35 USC § 103

6. Claims 30, 31, 34 – 40, 42 and 44 – 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) as applied above, and further in view of Guha et al. (U.S. Patent No. 6,146,755), Sandstrom (U.S. Patent No. 5,972,461) and Zou et al. (U.S. Patent No. 6,194,015) for the reasons of record as set forth in Paragraph No. 7 of the Office Action mailed on May 26, 2004.

7. Claims 1 – 6, 11, 14, 15, 17 – 27, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461) and Zou et al. ('015) as applied above, and further in view of O'Hollaren et al. (U.S. Patent No. 6,154,438) for the reasons of record as set forth in Paragraph No. 8 of the Office Action mailed on May 26, 2004.

8. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. as applied above in Paragraph 5, and further in view of Yamaguchi (DE 43-26296 A1) for the reasons of record as set forth in Paragraph No. 9 of the Office Action mailed on May 26, 2004. . See provided English Translation of DE '296 A1.

9. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461) and Zou et al. ('015) as applied above in Paragraph 6, and further in view of Yamaguchi (DE '296 A1) for the reasons of record as set forth in Paragraph No. 10 of the Office Action mailed on May 26, 2004. See provided English Translation of DE '296 A1.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015) and O'Hollaren et al. ('428) as applied above in Paragraph 7, and further in view of Yamaguchi (DE '296 A1) for the reasons of record as set forth in Paragraph No. 11 of the Office Action mailed on May 26, 2004. See provided English Translation of DE '296 A1.

11. Claims 71 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. as applied above in Paragraph 5, and further in view of Wu et al. (U.S. Patent No. 6,156,422) for the reasons of record as set forth in Paragraph No. 12 of the Office Action mailed on May 26, 2004.

12. Claims 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461) and Zou et al. ('015) as applied above in Paragraph 6, and further in view of Wu et al. ('422) for the reasons of record as set forth in Paragraph No. 13 of the Office Action mailed on May 26, 2004.

13. Claims 29 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015) and O'Hollaren et al. ('428) as applied above in Paragraph 7, and further in view of Wu et al. ('422) for the reasons of record as set forth in Paragraph No. 14 of the Office Action mailed on May 26, 2004.

14. Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. as applied above in Paragraph 5, and further in view of Lazzari (U.S. Patent No. 4,911,967) for the reasons of record as set forth in Paragraph No. 15 of the Office Action mailed on May 26, 2004.

15. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461) and Zou et al. ('015) as applied above in Paragraph 6, and further in view of Lazzari ('967) for the reasons of record as set forth in Paragraph No. 16 of the Office Action mailed on May 26, 2004.

16. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015) and O'Hollaren et al. ('428) as applied above in Paragraph 7, and further in view of Lazzari ('967) for the reasons of record as set forth in Paragraph No. 17 of the Office Action mailed on May 26, 2004.

17. Claims 51 – 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461) and Zou et al. ('015) as applied above in Paragraph 6, and further in view of Bonnebat et al. (U.S. Patent No. 4,987,020) and Nigam et al. (U.S. Patent No. 5,968,627) for the reasons of record as set forth in Paragraph No. 18 of the Office Action mailed on May 26, 2004.

18. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015) and O'Hollaren et al. ('428) as applied above in Paragraph 7, and further in view of Bonnebat et al. ('020) and Nigam et al. ('627) for the reasons of record as set forth in Paragraph No. 19 of the Office Action mailed on May 26, 2004.

19. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461) and Zou et al. ('015) as applied above in Paragraph 6, and further in view of Bonnebat et al. ('020) for the reasons of record as set forth in Paragraph No. 20 of the Office Action mailed on May 26, 2004.

20. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015) and O'Hollaren et al. ('428) as applied above in Paragraph 8, and further in view of Bonnebat et al. ('020) for the reasons of record as set forth in Paragraph No. 21 of the Office Action mailed on May 26, 2004.

21. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461) and Zou et al. ('015) as applied above in Paragraph 6, and further in view of Bonnebat et al. ('020), Ito et al. (WO 98/42493), and Yotsuya et al. (U.S. Patent No. 6,335,843 B2) for the reasons of record as set forth in Paragraph No. 22 of the Office Action mailed on May 26, 2004. See U.S. Patent No. 6,096,419 which is the U.S. Equivalent of PCT WO98/42493.

22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015) and O'Hollaren et al. ('428) as applied above in Paragraph 7, and further in view of Bonnebat et al. ('020), Ito et al. (WO '493), and Yotsuya et al. ('843 B2) for the reasons of record as set forth in Paragraph No. 23 of the Office Action mailed on May 26, 2004. See U.S. Patent No. 6,096,419 which is the U.S. Equivalent of PCT WO '493.

23. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015), O'Hollaren et al. ('428), Bonnebat et al. ('020) and Nigam et al. ('627) as applied above in Paragraph 18, and further in view of Fujita et al. (U.S. Patent No. 4,870,429) for the reasons of record as set forth in Paragraph No. 24 of the Office Action mailed on May 26, 2004.

24. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landin et al. ('774) in view of Guha et al. ('755), Sandstrom ('461), Zou et al. ('015) and O'Hollaren et al. ('428) as applied above in Paragraph 7, and further in view of Kuromiya et al. (U.S. Patent No. 5,585,989), Oniki et al. (U.S. Patent No. 5,875,083) and Miyake et al. (U.S. Patent No. 5,585,159) for the reasons of record as set forth in Paragraph No. 25 of the Office Action mailed on May 26, 2004.

Response to Arguments

25. The rejection of claims 1 - 73 under 35 U.S.C § 102(b) and/or 103(a) –

Landin et al., alone or in view of various references

Applicant(s) argue(s) that “the areal densities do add patentable subject matter”
and content that the Examiner has not given the limitation “proper consideration” (page
14 of response). The examiner respectfully disagrees.

As clearly noted in the rejection of record (*Paragraph 4 of the Office Action mailed May 26, 2004.– repeated in Paragraph 4 above*), the Examiner *did* give the limitation patentable weight. As stated in the rejection of record, the prior art “medium *in its entirety must be capable of achieving* the claimed areal recording density for optimal head-disk spacing”. Given that the claimed recording densities have been shown to be obtainable by selection of desired magnetic layers and/or head-disk spacing, the Examiner repeats his position that the disclosed prior art media are capable of meeting the claimed recording density limitation.

Applicants further question why a 102(b) rejection has been raised when it was
not addressed previously, and that Landin et al. does not “illustrate a core comprising a
varied thickness”, but that Landin discloses a layer that “is merely discontinuous” (page
15 of response). The Examiner respectfully disagrees.

First, the Examiner acknowledges that the 102(b) rejection on claims 56 and 58 – 70 should have been previously raised, but the Examiner mistakenly grouped the independent claim 56 in with the plurality of other independent claims presented by applicants. The Examiner felt that correcting this oversight in order to better prepare the

case for appeal, should applicants desire to reinstate their appeal, was in the best interest of further prosecution.

Regarding the argument that Landin et al. does not disclose a core comprising “varied thickness”, the Examiner feels that applicants are improperly construing the claimed limitation. Applicants are reminded that claim limitations must be given the broadest reasonable interpretation(s) consistent with the written description in applicants’ specification as it would be interpreted by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Donaldson Co., Inc.*, 16 F.3d 1190, 1192-95, 29 USPQ2d 1845, 1848-50 (Fed. Cir. 1994). See MPEP 2111. Specifically, “varied thickness” applies to the embodiments represented by Figures 13, 16, 17 and 25, as well as those in Figures 29 – 35, and applicants never define what is meant by the term “varied thickness”. The Examiner respectfully notes that a thickness that goes from 0 to “x” and back down to 0 is varying, and is deemed to be well within the broadest reasonable interpretation consistent with applicants’ written description. Respectfully, the Examiner notes that “varied thickness” simply means a thickness which is not constant across the entire layer. Applicants contention that “varied thickness” implies that the thickness must always be greater than 0 is not supported by applicants’ disclosure.

In addition, applicants state that the present amendment to “shock and/or vibration excitation” clarifies the Examiner’s comment regarding the magnitude of shock or vibration (page 16 of response). The Examiner respectfully disagrees.

The Examiner notes that there appears to be some confusion of the term "magnitude". The Examiner was merely noting that if the medium was subject to a "shock and/or vibration excitation" of a force equal to a feather landing on it (e.g. 0.000001 N?), then clearly the medium would not produce an axial displacement peak of 500 μ . The present claims do not recite what magnitude (e.g. *amount of force*) is applied to generate said "shock and/or vibration excitation" and since the response to the "shock and/or vibration excitation" is in direct proportion to the magnitude of the force applied, applicants' present claims do not result in a limitation which can be construed to distinguish over the prior art since a force of $-\infty$ would reasonably be expected to produce a response of 0 μ , hence reading on the "less than" language used by applicants.

Furthermore, applicants argue that there is no expectation of success to modify the Landin et al. invention as required by the Examiner with regard to the various claimed property limitations (pages 17 and 21 of the response). The Examiner respectfully disagrees.

The Examiner notes that in each rejection, the Examiner has provided explicit teaching from the prior art why the claimed property values would be desired by an artisan. Applicants appear to be implying that since a single reference disclosing the structure of Landin et al. combined with the claimed property limitations (i.e. a "102-type" reference) is not relied upon, that the combination is not motivated by the prior art. The Examiner notes that this logic is spurious and that a fundamental reason for the existence of the 103 statute is to insure that the Office need not find "102-type" art on

each and every application. Applicants would seek to require that each and every patentee include every known property in every application filed, even when an individual patentee might be seeking protection on a small localized improvement in one area of a prior art invention.

Regarding the media references relied upon in the pending application, while some of the references fail to disclose the density, surface roughness, or moisture content, perhaps because the inventors were seeking coverage on other aspects of the media, it does not mean that such properties did not exist in the disclosed invention. It is unreasonable to expect an inventor to be required to report every property that they may or may not be capable of measuring. The 103 statute explicitly provides for removing this burden on a patentee by providing for the use of secondary references (which perhaps *are* directed to optimizing the claimed property) to teach the claimed subject matter. Furthermore, applicants are reminded that the test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Hedges*, 783 F.2d 1038; *Ex parte Martin* 215 USPQ 543, 544 (PO BdPatApp 1981). Since applicants are claimed a properties, properties which the Examiner notes are inherently possessed to some degree by each and every recording medium, the Examiner deems that the use of secondary references to teach that the claimed ranges are known to one of ordinary skill in the art is within the 103 statute and qualifies as a *prima facie* case of obviousness.

Applicants further argue that “an edge lift of less than about 8 μ was not even possessed by storage media produced after the publication of the present application” and that “merely because one reference identifies a property as desirable does not mean that another media therefore will have that property” (page 18 of response). The Examiner respectfully disagrees.

First, the Examiner notes that “6.2 μ ” is less than 8 μ . Second, the Examiner never stated that the prior art would “therefore have that property”, but that it would have been obvious to optimize the medium to possess the property. The motivation provided by the Examiner was properly summarized by applicants as: “one reference identifies a property as desirable”. Given the same field of endeavor of the references, applicants argument that there would be no expectation of success is not deemed persuasive.

Finally, applicants argue that “Yamaguchi does not appear to teach, mention, or suggest cores” and that there is therefore no teaching regarding applicants claimed core geometries (pages 18 – 19 of response). The Examiner respectfully disagrees.

As stated in the rejections of record, Yamaguchi et al. disclose forming the entire medium possessing a shape meeting applicants’ claimed limitations. Applicant(s) are reminded that “the test for obviousness is not whether features of the secondary reference may be bodily incorporated into the primary reference’s structure, nor whether the claimed invention is expressly suggested in any one or all of the references, rather the test is what the combined teachings would have suggested to those of ordinary skill in the art.” *Ex parte Martin* 215 USPQ 543, 544 (PO BdPatApp 1981). In the instant

case, Yamaguchi et al. clearly teach forming each and every layer such that they possess a tapered structure, which necessarily reads on the limitations directed to the "core" geometry (e.g. *Figures 3, 5, 7, 9 and 11 of Yamaguchi et al.*). Applicants are further reminded that the specification is not the measure of the invention. Therefore, limitations contained therein can not be read into the claims for the purpose of avoiding prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968). It appears that applicants are arguing a structure of a core having a tapered surface while the plastic portion ends up with a surface having no variation from a line drawn through the center of the disk (e.g. *substrate structures shown in applicants' Figures 33 – 35*). ***This is not what is presently claimed!***

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vierk et al. (U.S. Patent No. 6,764,734 B2) is directed to similar subject matter as disclosed by applicants, namely the formation of *composite plastic substrates* for use in magneto-optical or magnetic applications wherein the substrate is formed from a high modulus material core surrounded by plastic resin "skins" on one or both sides of the material core (*entire disclosure*).

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Bernatz, PhD.
Primary Examiner

October 1, 2004